

to the proximal end of the coupling assembly to the rocking beam for translating substantially linear motion to rotary motion of the rocking beam.

6. The rocking beam drive mechanism as set forth in claim 5, further comprising the first end of the connecting rod having a tapered portion for engaging the at least one piston.

7. The rocking beam drive mechanism as set forth in claim 5, further comprising the second end of the connecting rod having a tapered portion for engaging the at least one coupling assembly.

8. The rocking beam drive mechanism as set forth in claim 6, wherein the at least one piston comprising a separable base portion and shell portion and wherein the tapered end of the piston is received within a receiving passage of the base portion.

9. A Stirling cycle machine comprising:

at least one rocking drive mechanism comprising:

a rocking beam having a rocker pivot;

at least one cylinder;

at least one piston, the piston housed within a respective cylinder; and

at least one coupling assembly having a proximal end and a distal end, the proximal end being connected to the piston and the distal end being connected to the rocking beam by an end pivot;

a crankcase housing the rocking beam and housing a first portion of the coupling assembly;

a crankshaft coupled to the rocking beam by way of a connecting rod;

a working space housing the at least one cylinder, the at least one piston and a second portion of the coupling assembly; and

an airlock space separating the crankcase and the working space for maintaining a pressure differential between the crankcase housing and the working space housing.

10. The Stirling cycle machine as set forth in claim 9, further comprising a first seal for sealing the crankcase from the airlock space, wherein the seal is a rolling diaphragm.

11. The Stirling cycle machine as set forth in claim 9, further comprising a first seal for sealing the crankcase from the airlock space, wherein the seal is a pair of oppositely disposed rolling diaphragms.

12. The Stirling cycle machine as set forth in claim 10, further comprising a second seal for sealing the workspace from the airlock space, wherein the seal is a high pressure seal.

13. The Stirling cycle machine as set forth in claim 9, further comprising an airlock pressure regulator connected between the crankcase and one of the airlock space and the working space.

14. The Stirling cycle machine as set forth in claim 9, wherein the airlock pressure regulator is a bidirectional

pressure regulator for maintaining a predetermined pressure differential between the crankcase and one of the airlock space and the working space.

15. An external combustion engine comprising:

at least two rocking drive mechanisms comprising:

a rocking beam having a rocker pivot;

at least two cylinders;

at least two pistons, the pistons each housed within a respective cylinder; and

two coupling assemblies having a proximal end and a distal end, the proximal end being connected to the piston and the distal end being connected to the rocking beam by an end pivot;

a crankcase housing the rocking beam and housing a first portion of the coupling assemblies;

a crankshaft coupled to the rocking beam by way of a connecting rod;

a lubricating fluid pump in the crankcase for pumping lubricating fluid to lubricate the crankshaft and the rocking beam and the first portion of the coupling assemblies;

a working space housing the cylinders, the pistons and the second portion of the coupling assemblies;

an airlock space separating the crankcase and the working space for maintaining a pressure differential between the crankcase housing and the working space housing;

a heating element comprising a burner having at least one burner head for igniting and maintaining a heating flame in a combustion chamber adjacent the at least one heater head; and

an electronic control unit managing the heating element according to operational data of the engine obtained from at least one of the rocking drive mechanisms, lubricating fluid pump, the crankcase, the working space, crankshaft, heating element and the airlock.

16. The external combustion engine as set forth in claim 15, wherein the burner comprises a burner head igniting and maintaining a single flame for heating a plurality of heater heads.

17. The external combustion engine as set forth in claim 15, further comprising at least one of a cooling gas and air input wherein the electronic control unit measures a temperature at the at least one heater head and supplies the at least one of a cooling gas and air input to manage the temperature of the heater head.

18. The external combustion engine as set forth in claim 17, further comprising a single blower controlled according to the electronic control unit to provide the at least one of a cooling gas and air input to the engine

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